MEMO

DATE: January 2, 1981

TO: Bill G., Paul A., Steve S.,
Mark U., Mark C., Steve B.

FROM: Bob O'Rear

RE: Status of 8086 BASIC and HAL

1. Standalone 8086 BASIC for ACUREX - 2 Segment Model

   This version of 8086 BASIC has been delayed for months due to perceived higher priority projects. If I dropped all other projects it could probably be completed within a week. To date I have run this version except that the disk code (SPCDSK) was not correct. I corrected the problems I knew of then INIT changed during the interim, along with BINTRP, BIO, BIMISC, etc. and nothing came up. Further, SPCDSK got a "missing right bracket" message when I tried a conversion run. Due to the small amount of time actually dedicated to this project all is a little hazy at this point. This version, however, needs to be pushed through since it is a contractual obligation to ACUREX and the contract date (12 Dec.) has already lapsed.

2. Consulting Obligation to ACUREX

   No work has been performed toward this contractual obligation. We do owe ACUREX 40 hours of consulting time in order for them to extend BASIC to have a few special functions for their industry (controls business). I expect them to ask for this time in the next month.

3. Bug in ISIS version of BASIC. LAZOR Systems produced a bug in single segment BASIC as follows:

   ```
   10 PRINT 100#/100#
   20 GOTO 10
   ```

   The bug is that the value printed is not always 1. Additionally Convergent Technology was able to reproduce this bug in both single and 2 segment BASIC although it behaves differently in the two versions (does not always produce 1.) I've been unable to reproduce this bug in simulated mode, standalone 8612, or 86-DOS versions of the program. Additionally, I've done file compares of double precision add, subtract, multiply, divide and the support routines from those used to construct the 86-DOS version and those sent to Convergent Tech. Nothing of significance comes out of these compares. LAZOR Systems wants this problem fixed pretty bad so they are going to want me to work it with them on the phone early next week.

4. BASIC source for LAZOR, Convergent Technology, ACUREX, Oakleaf, ARTELONICS and Seattle Computer Products.

   Now that two segment BASIC is fairly sound, I need to prepare new source for these people. I anticipate a few problems and a weeks elapsed time will be necessary to actually accomplish this. Once I get the source finished I will put it on master diskettes go that I can sell "Standard 8086 BASIC" from these ISIS II diskettes. For Seattle Computer Products I will have a separate version involving DCPM.

5. CP/M-86 BASIC

   We have a PIICEON Computer along with CP/M-86 and we need to bring up our CP/M-86 BASIC. I don't think we fully understand it yet but we've identified several modifications that need to be made to INIT, BIO, DCPM and possible BINTRP. We will need to make CPMENT external in these modules, understand the interrupt calls necessary for BASIC support, change the RESET code and modify the punch program on the 2020 to emit a module suitable to CP/M-86. This version of BASIC will be necessary for our CP/M-86 direct sales, Intel Austin, PIICEON.

6. RMX-86 BASIC

   In the next month we anticipate an agreement in place along with necessary hardware to bring up RMX-86 BASIC.

7. XENIX BASIC-86

   May timeframe for this work.

8. 8087 Work

   In the long term we may find it necessary to make use of the 8087 in order to be competitive. It would be desireable to begin this work soon as many potential (and current) OEMs have an interest in this chip.

9. HAL Project

   This project is getting into trouble very fast. It's not too late at this point to recover but we need to take action immediately.

   A. The first problem area is in testing and documentation. HAL personnel expect more complete documentation on the 86-DOS and on the extensions to BASIC. Both Microsoft and HAL are at a loss in writing test cases for the Microsoft extensions since the syntax is not documented. We have promised a slipped date of January 12 to provide some sort of updated material on the HAL BASIC extensions. This document really needs to begin immediately. January 26 is the current date we are scheduled to provide an Assembler/Linker reference manual. This work along with the work described in D should begin immediately.

B. Standard BASIC and DOS

The adaptation of our standard BASIC and 86-DOS to the HAL hardware is proceeding very slow. This is due mainly to poor hardware performance but is augmented by a late start and oversight in our monitor requirements (we didn't require a good disk read/write procedure in the monitor and the one we got is a little cumbersome to use). Also contributing to the problem is the fact that the command processor is run as a user program thus allocation tables and a directory must be on the disk along with the command processor file. Further, there is no "SAVE" command in 86-DOS so to transfer other programs over to the HAL hardware and save them on the disk I need the Debug facility since it has sufficient commands for saving a new file and updating the directory and allocation tables (I think).

C. ROM BASIC

No work has begun to put together HAL's ROM BASIC. This BASIC is a cassette BASIC with some of the extensions from Appendix C in the proposal. I don't have a good feel for the type problems we will encounter in doing an 8086 cassette BASIC with hooks but judging from past experience I suspect we have no chance of the March date being met if this work is not initiated immediately. This work can be performed in parallel with B above.

D. Assembler/Linker

As mentioned in A above we have a late January schedule for the HAL assembler linker reference manual and we need to begin immediately for us to meet this date. I believe a good first task for the product manager for this product should be the production of these manuals along with the adaptation of these products to the HAL computer. The current delivery date of April 6 does not leave sufficient time for our Pascal group to meet their April 20 schedule.

E. FORTRAN-86

We have a February 9 delivery of the FORTRAN-86 Reference Manual. Thus work needs to begin right away in order to make this delivery.

Summary

BASIC-86 work is increasing very rapidly. With Mike Courtney helping full time with the HAL project I think we need an additional person to help with non-HAL work. Without this additional help, I anticipate BASIC-86 projects continuing to slip further behind.